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··DEALER EDITION··

Electricity on the Farm

March 1929

DEALERS! Don't Miss "Advertising Headlines that Sell Electric Service" (*see page D9*)

We asked a Farm Wife

"How do you like your electric range?"

SHE said, "You can take away anything I have in the house except my Hotpoint electric range. It saves me hours of extra work and time every day. I have no fires to start, no wood or ashes to bother about. It is always ready and it cooks far better. And it's automatic. I don't need to watch my cooking. I can start a meal in the automatic oven, or on the surface "burners" and in the Thrift Cooker, and go about other things without giving the cooking another thought until mealtime! It is the greatest convenience I have; and it's economical, too."

Hotpoint automatic electric ranges are the choice in the vast majority of farm kitchens because of their greater *speed*, larger ovens, practically indestructible Calrod heating elements, their greater economy and the automatically maintained temperature control which insures better cooking. Ask your electric company for full information.

HOT WATER

Electrically, too!

A Hotpoint automatic electric water heater will prove a great convenience too. Ask your electric company how it can heat water during night hours and give an adequate HOT supply all through each day.

Hotpoint

EDISON ELECTRIC APPLIANCE CO., Inc.
5622 W. Taylor St. Chicago, Illinois
A GENERAL ELECTRIC ORGANIZATION

There's a Hotpoint Electric Range for Every Purse and Purpose

When He Comes ~ Welcome Him!

THE extension of electric service lines into rural communities, brings to the farmer welcome opportunities for making work easier, life happier and labor more profitable. No contribution that electricity can supply is greater perhaps, than the gift of a dependable automatic water system.

MYERS Self-Oiling Water Systems

LOOK to Myers for the safe and sure answer to your water service problem. Here is a *complete line*, in a range of capacities up to 10,000 gallons per hour. Myers Water Systems are made not only for electrical operation — home light plant or central-station service — but also for hand, windmill and engine power. All are self-oiling. Myers electric operated systems are *entirely* automatic — self-starting, self-stopping.

FIG. 2511

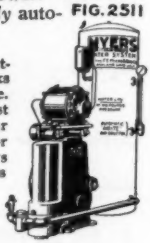
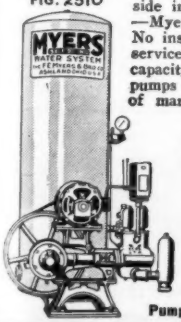


FIG. 2510

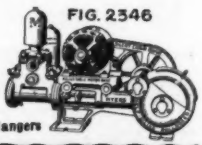


Systems for deep or shallow wells; inside or outside installation; with or without pressure tanks —Myers offers you practically unlimited choice. No installation is too small to command the best service we can offer, nor too large to tax our capacity. Myers is world's headquarters for pumps for every purpose—backed by fifty years of manufacturing experience. See your Myers dealer or write us direct.

The F. E. Myers & Bro. Co.

361 Orange St., Ashland, Ohio

FIG. 2346



Pumps, Water Systems, Hay Tools, Door Hangers

Electricity on the Farm

Vol. 2 MARCH 1929 No. 3

We accept advertising only from concerns we believe to be absolutely reliable. Readers are requested to notify us promptly of any failure on the part of an advertiser to live up to the standards of service promised in these pages, whereupon we will immediately take suitable action.

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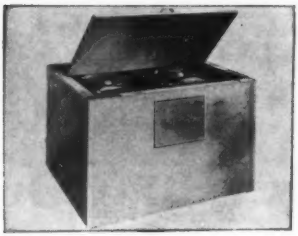
The Secret of Happier Cooks and Better Cooking

COOK by electricity . . . with a MONARCH Electric Range. That's the secret, as thousands of happy farm women have already discovered. You will prefer the MONARCH for its remarkable *speed* and economy . . . for its beautiful design and enameled body, in white, green or yellow. Also because you will find among its many models precisely the style that meets your particular requirements—perhaps one of the several models with built-in kitchen heater for coal and wood. May we send you a booklet showing them all? Write

MALLEABLE IRON RANGE CO.,
400 Lake Street - - Beaver Dam, Wis.

Monarch

ELECTRIC RANGE



Acceptance for your milk
Insure it with a
KELVINATOR Milk Cooler

Standards of temperature are getting stricter all the time. Boards of Health everywhere are increasing the demands as to the condition of the milk delivered to the receiving station.

Take no chances! You don't, with your stock, your home, your barns! You insure them. Then insure the acceptance of your milk — at least as far as its temperature is concerned. A Kelvinator Milk Cooler will do this for you and will assure your being able to take advantage of the best markets — ALWAYS.

Kelvinator Milk Coolers have been proved to be definite money-makers Kelvinator-cooled milk is cooled properly. And properly cooled milk contains the minimum number of bacteria. It thus often commands premium prices in the best markets. These increased earnings, combined with the savings on rejected milk on the platform and the savings on buying ice or on the labor of harvesting, storing and handling, quickly make Kelvinator Coolers pay for themselves. And then the new profits are all clear — yours. Let us tell you of this new way of properly cooling your milk.

Kelvinator Corporation
DETROIT MICHIGAN

Facts Every Dairyman Should Know About the KELVINATOR Milk Cooler

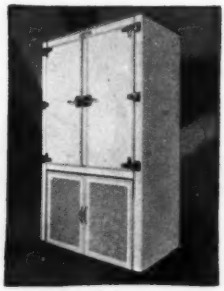
Kelvinator presents a revolutionary idea for the quick cooling and storing of milk in this new electric milk-cooling cabinet.

This submergible-type cooler is designed to meet a wide application to farm and dairy requirements.

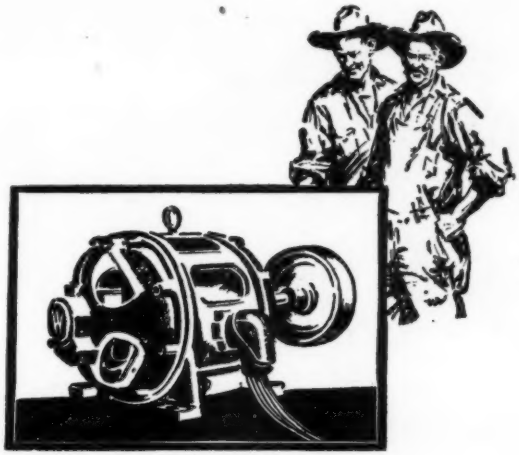
This is a sturdy, well-constructed, steel-clad cabinet, insulated with pure cork board, built to give long life.

Multiples of this unit will take care of any milk-cooling requirements. The necessary compressor for either a single unit or a multiple installation is one of sufficient capacity to adequately carry the load.

Outlets are provided for operation of an aerator and a circulating pump can be furnished at slight additional charge.



Kelvinator brings the greatest dependability in electric refrigeration for the home.



Let a motor do your heavy work . . .

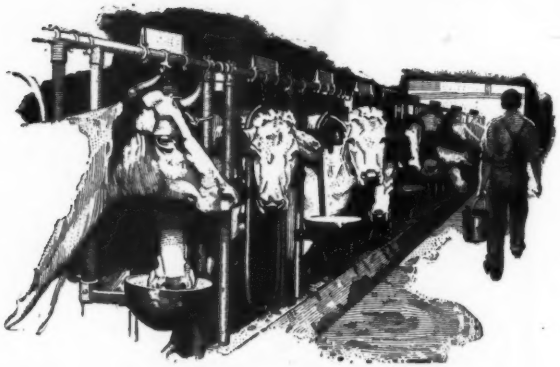
The heavy jobs—the jobs that strain your muscles and tire you out—can be done more quickly, more efficiently and more *cheaply* with a Westinghouse motor. The motor's cost of operation is small; it is never tired; it does your heaviest work at a minimum wage.

Westinghouse motors are made by electrical experts. They are made to run for years with little or no attention; they do not require a special knowledge of electricity. And they are made in many sizes and capacities, to give you just the right one for your needs.

WESTINGHOUSE ELECTRIC & MFG. COMPANY
Offices in all principal cities—Representatives everywhere

Electric irons, electric ranges, heating appliances—when they carry the Westinghouse trade-mark, you know they are good for years and years of hard service.

Westinghouse



WATER—*When And Where You Want It*

IS it water for the stock, or for the house? Here it is, right where you want it, when you want it, and plenty of it.

That is the value of electric pumping equipment. The extreme simplicity of electric motor operation with automatic control makes it almost anticipate your wants. There is no hand pumping and carrying, nothing to watch or supervise. Turn a faucet or press a switch and you get water—all you can use.

When farmers have worked with G-E electric equipment they realize what it was that they had always lacked on the farm—electricity.

Tune in on WGY (Schenectady), KOA (Denver), KGO (Oakland), for the General Electric Weekly Farm Program.

Ask Your Power Company

If you are located on or near an electric power line, ask the power company for complete information concerning the possible uses of electricity on your farm.

GENERAL ELECTRIC

200-121D

Electricity on the Farm

Vol. 2 MARCH 1929 No. 3

Is It Safe?

Press reports recently described an accident which happened on a farm and in which a farm girl had been injured by an "electrical" machine. While subsequent investigation disclosed the fact that the machine was not electrically driven, but was operated by a gasoline engine, nevertheless the question arises as to just how safe electrically operated equipment is as compared with machines operated by other types of power.

From the standpoint of safety of operation, an electrical motor, when properly installed, is fused, so that in the event of a sudden increase of load, the fuse will "blow" and the motor will stop. On gasoline and oil engines there is no parallel safety device. For instance, suppose foreign material gets into a food cutter, and jams the machine. If it is operated by an electric motor, the fuse "blows" and the motor stops. If operated by a gasoline or oil engine, either the engine must stall, the belt slip, or what is worse, the foreign material will pass through the cutter, and may do serious damage.

From the standpoint of fire safety, electrical machinery is by far the safest. If of good design, and not overloaded or abused, electrical motors will not overheat no matter how long they are operated without a rest. There is no such thing as back-firing, heating of exhaust pipes, or development of other fire hazards such as are encountered in gasoline or oil engines.

Electrical wiring, if properly installed, is infinitely safer than the storage and handling equipment for gasoline or other inflammable oils.

Electricity represents, without question, the safest form of power available for use around farms.

Water for Crops
When Needed

An Irrigated Truck Farm in Eastern Virginia. Water Is Pumped by Electricity.

BY CHASE E. SEITZ

"WATER when needed," this was the reply of thirty vegetable growers of Virginia when asked, "What do you consider the prime benefits of irrigation?" These farmers are using overhead or sprinkling irrigation to assure water when needed and have found their irrigation systems a good investment and the best form of insurance against dry weather. Some other benefits mentioned by these growers were: enables one to secure an early crop, increases yields, and assures a crop. Overhead irrigation has a number of advantages over other types of irrigation which make it more suitable to conditions in the humid sections. It can be used on hilly or rolling land as well as on level land and on any kind of soil; it is economical of water and labor; it applies water evenly and slowly in a fine mist that does not puddle or pack the soil; and it can be used to apply some fertilizers to the crops.

The type of overhead irrigation system in most general use throughout the eastern United States, consists of parallel lines of pipe, fitted with nozzles at intervals of 3 or 4 feet along one side of each pipe line. The pipes being supported with posts or cables about 6½ feet above the ground or on low stakes or boxes. The pipe lines are usually made permanent although some growers prefer movable lines that can be changed from one part of a field to another in order to irrigate a larger area with a given amount of pipe. The spacing of the pipe lines depends mainly upon the pressure obtainable. For instance, if the pressure will permit a range of 25 feet the pipe lines can be spaced 50 feet apart. By turning the pipe an area of 25 feet on each side of the pipe line can be reached thus covering a strip 50 feet wide. Pressures of from 20 to 80 pounds are required, depending upon the size of installation.

The cost of overhead irrigation varies from $250 to $500 per acre with the average about $300. In a study made in New Jersey of

350 farms having overhead irrigation it was found that the average initial cost of a system with permanent lines was $415.30 per acre as compared with $124.41 per acre for a system with movable lines. Movable lines, besides using less equipment per acre are usually placed on temporary supports, thus eliminating much of the expense of permanent lines. However, there is less labor required for operating permanent lines and they have a longer life. According to the New Jersey study the estimated average life for the permanent lines is about 22 years as compared with about 18 years for the movable lines. The average estimated life for all types of irrigation lines as given by 164 farmers was about 21 years.

Purpose of Overhead Irrigation

The primary purpose of overhead irrigation in the eastern states is to insure a sufficient amount of moisture when needed in order that maximum profits may be made from crops under intensive cultivation. Sufficient moisture is needed even on the finest of soil with the best of seed and fertilizer. If rains do not come or water is not supplied by some means at the proper time and in sufficient quantities the crop yields will be cut short or ruined. Successful growers of vegetables as well as flowers and ornamental shrubs are finding that they cannot afford to gamble with the weather by depending on nature to supply enough moisture at the right time. A properly designed irrigation system will insure growers against failures from drouth, which is one of the greatest hazards facing the commercial grower. Scarcely a year occurs in any state when the amount of rainfall for at least one month during the growing season does not fall below the average. Nearly every year a drouth occurs of from ten days to three weeks duration and often longer.

Overhead irrigation systems are giving general satisfaction throughout the east. In the New Jersey study 259 farmers reported that they were pleased with their systems, while only 36 had occasion to mention faults which might have been corrected at the time of installation. In a similar study made in Virginia 29 farmers out of 30 interviewed were well satisfied with their systems. There has been a constant increase of irrigation systems each year throughout the east. In New Jersey alone from 1909 to 1925 something like 335 systems were installed. The average irrigated area on these farms is about 7½ acres. There are also a number of large irrigation systems, the Del-Bay Farms with 242.5 acres under irrigation is the largest. In Virginia the average area under irrigation is 8½ acres for truck farms and 2½ acres for flower and nursery farms. The largest area under irrigation in Virginia is 42 acres on the L. W. Purdum farm near Danville. In 1915 Mr. Purdum installed his first unit of an overhead irrigation

Pumping Plant for Irrigation System on an Eastern Virginia Truck Farm. Electric Motor in This Installation Replaced a Gasoline Engine

system and seven years later he had 32 acres under irrigation. Last year 10 acres more were added to the system.

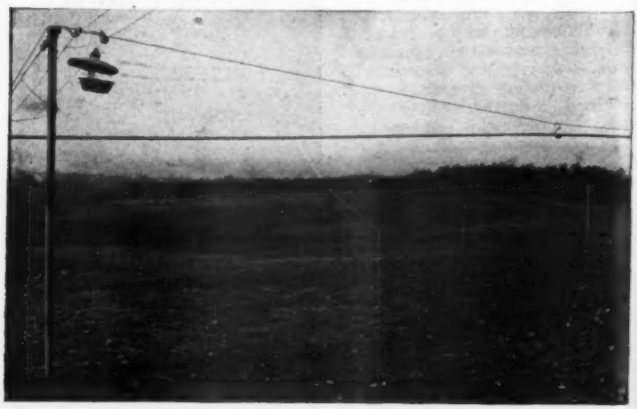
Mr. Purdum's system has a main pumping unit located on the banks of a small stream at the lower edge of his farm. The pumping plant consists of a 3 cylinder 7 x 8 pump direct connected to a 20-h. p. 220-volt, 3-phase motor. The suction lift is 13.5 feet, while the highest point on the farm to which water is forced for irrigation is about 100 feet above the water level in the stream at the pump house. The parallel pipe lines are spaced 50 feet apart. One inch of water can be sprayed on 8 acres in from 10 to 12 hours. During dry seasons an average of two irrigations a week are made. The system cost an average of $300 per acre.

Overhead irrigation is not practical on any but intensive crops. Crops like corn, hay or field grain would be benefited by the use of overhead irrigation but the price received for such crops would not justify the investment cost of irrigation. This system of irrigation is especially adapted to certain crops having a high acreage value, enabling maximum returns from a small area. Edible leaf and root crops which are benefited by an abundance of water and that have a short season of growth permitting two or more crops per year, are especially adapted to this system of irrigation. The ten leading crops in New Jersey which have been profitable under irrigation, in the order of their acreage, are:—lettuce, spinach, celery, beets, carrots, string beans, cabbage, onions, radishes and cauliflower. In Virginia the ten leading irrigated crops in the order of their acreage are: salads, cucumbers, beets, parsley, lettuce, tomatoes, turnips, egg plant, celery and cantaloupes.

Source of Supply

An adequate water supply is very important to the success of an irrigation system. Water for overhead systems in the east is usually obtained from city mains, wells, surface streams or ponds. Wells are the most common source for such systems in the eastern states. Reciprocating piston pumps and centrifugal pumps are the two types of pumps most generally use. The power is usually supplied by motor or gasolene engine. Electric power is ideal for pumping and where electric power is available it is quite generally

(*Continued on page 36*)



Partial View of Overhead Irrigation System on the L. W. Purdum Farm Near Danville, Virginia. Note the Hilly Nature of the Land on Which Irrigation Lines Are Operating.

Clean Methods in a Clean Barn.

Keeping the Microbes Out of the Milk

By E. R. MEACHAM

KEEPING the microbes out of the milk that goes to the creamery, the cheese factory, the condensary or the milk bottle is a big job. It has to begin long before milking time for it calls for prevention rather than cure. Once they are in, you can't get them out again. Not all the king's horses nor all the king's men can lower the bacteria of contaminated milk.

Straining it through a cotton filter takes out the dirt you can see, but it does not touch those little organisms that determine its keeping quality, its cheese making quality, its flavor or its odor.

In a recent talk on care of milk in the farm dairy, E. H. Parfitt of the Department of Dairy Husbandry at Purdue University quoted Dr. North, an authority on milk with the Board of Health of New York as putting the responsibility for the varying bacteria count in milk on these four factors, the barn, the man, the cooling, the sterilization of utensils, with the emphasis immeasurably greatest on the man and the sterilizing.

Operators Must be Clean

A careless, dirty operator can take absolutely sterile milk pails into the barn and, if he sits down by the cow without cleaning or brushing her off, can knock enough bits of dirt into the pail to introduce millions of bacteria before he has drawn a quart. And a careful man, on the other hand, can overcome the handicaps of poor or

scanty equipment by the rigid standards of his cleanliness.

There are some things that make the job easier, that's all.

The construction of the barn is one of them. The walls should be smooth and tight. And so should the overhead floor, so tight that dust and chaff can't sift down from the hay and drop into the milk. A ceiling to the stable insures this and helps a good deal in keeping the barn warm as well as clean.

Water under pressure to sluice down the walls as well as the floor and gutters is a second.

Litter Carriers Help

The litter carrier running on a track behind the cows is another. There are a couple of farmers in Waukesha County, Wisconsin, who have even devised a scheme for taking out the manure and straw by machinery.

Louis M. Swartz is one; Henry Peterson, the other. I visited the Swartz farm one day last fall and watched his cleaner in operation. It is a slatted chain conveyor built into the gutter behind the cows. It carries the litter along the gutter, through a square hole in the barn wall, up an incline outside the barn, and shoves it off into the manure spreader below.

A power-driven clipper. By its use keeping the cows in sanitary condition becomes a one-man job.

Mr. Swartz just scrapes off the cow platform, sweeps the alley behind the cows, and then presses the switch on a 3 H.P. motor.

Two minutes later the conveyor has swept out the gutter, and the litter is falling off onto the pile. In two minutes more it has travelled back through a tight housing along the ceiling of the barn, and dropped down into its starting place in the gutter.

But to make all of these aids effective, a man needs plenty of light. Modern dairy barns have many windows, to be sure, but since most of the milking is done before daylight or after dark, good artificial light is a necessity.

The experimental work for the Kansas Committee on the Relation of Electricity to Agriculture included a detailed study of barn lighting. Their field engineer recommended that lights in the dairy barn be located in a row about four feet back of the stanchion line. That puts the light where the majority of the work is done, and still gives plenty of light in the feeding alley.

All lights in the barn should have reflectors. The shallow bowl type is recommended because it gives a wide distribution of the light and does not let the direct light from the bulb shine in the eyes of the workmen.

In dairy rooms a do e type is preferable because it prevents glare on shiny horizontal surfaces. Where a light has to be put up at the side of a room, or at one end of a feed alley, an angle reflector is best.

Then the next step in keeping the bacteria out is clean cows themselves. A clean, well drained barnyard keeps them from smearing themselves with filth, but even then they need unceasing care.

There is a farmer in southern

The milk-can carrier saves work and prevents tracking dirt into the milk house.

Wisconsin who has established a very high local reputation for clean milk of exceptional quality. They call him the babies' milkman.

The routine care of the circle of Guernseys in his round barn begins with regular clipping of the long hair on the flanks, udders, and under part of the body. Before every milking they groom the cows thoroughly with a curry comb and brush all along the flanks and sides. This takes off any loose hair, dust or dirt. Then they wash off the udders and flanks.

Proper Sterilization

Every utensil that touches the milk has had to be scrubbed and scoured and sterilized before milking begins. And even then, with barn, and cows and utensils, all scrupulously clean, the milker draws a stream of milk from each teat before he begins to milk into the pail, or before he attaches the milking machine to the cow. This draws off the milk in the teats themselves where bacteria may have collected.

Dr. North places extreme emphasis upon the proper sterilization of all these pails and cans that touch the milk. But proper washing must precede sterilization. Everything that has held milk must be washed out first with tepid water. This washes off the thin film of milk that sticks to the surface. Hot water cooks the casein onto the cans and makes them almost impossible to clean. After that comes hot water with plenty of good washing powder to carry off any grease or fat; then sterilization.

A kettle of water that leaves the kitchen steaming hot, loses a good many degrees between the house and barn. It cannot be trusted to sterilize a pile of milk pails.

George Tabbert of Ripon, Wisconsin has a five gallon electric water heater in his dairy room. He has no running water out there so he fills this tank when he comes out to the barn. He turns the current on at once, and by the time he is through milking and separating, that water is hot, generally boiling. This gives him plenty of water for both washing and sterilizing the dairy things.

(*Continued on page* 34)

Electrical Housekeeping

Conducted by GAIL MEREDITH

Sweeping Up

One sunny day last spring, I was driving down a road near the shores of Lake Michigan. In the yard of a prim little house on the outskirts of a good sized town I saw a group of women gathered around a big square rug lying on the ground. Two of the women were standing about grimly with their arms folded; the other three were kneeling on the rug beating away at it with all their strength. I slowed up the car and craned my neck out of the window to watch them. While I was looking, one of the kneeling women sat back on her heels and pushed her sunbonnet back from her forehead. With a shake of her head she handed the beater over to one of the other women and stood up.

The fresh worker attacked her corner vigorously and new clouds of dust were rising in little spurts as I drove out of sight.

Few houses have five women to spell each other with the carpet beating.

I speculated a lot about it as I drove on. Did all these women live together, and did they work in shifts at all the various jobs that go into keeping a house pleasant with cleanliness and order? Or was this a friendly neighborhood bee of an unusual kind?

Mrs. John McCutchin, of Arena, Wisconsin, Cleans by Wire.

That's one of the drawbacks of travelling. You see just a flash of things, and you never do get the beginning or the end of a story.

At any rate, here was a group that was most evidently a part of the sixty-three women in every hundred who clean their houses with beaters and brooms.

It may be that they have never really given a glance to a vacuum cleaner. Yet it is the oldest electrical household tool we have. As soon as motors were built and men discovered that their power could be set to work wherever the wires run, engineers and inventors began devising a machine to help the women of the homes with the never-ending job of cleaning up.

And this machine they evolved is just a nozzle, a fan, a bag, and an electric motor. The motor and the fan are hung between the nozzle and the bag. So when the motor turns the fan, it sucks air in through the nozzle and pumps it out through the bag.

The air rushing in like a strong wind carries the dirt and dust with it. This strikes against the bag which strains out the dirt and lets the air slide through. Moving the nozzle about makes the wind blow all over the surface to be cleaned.

There are brushes on some of the cleaners. They help loosen the

dirt from rugs or upholstery for the cleaner to pick up.

But floors and rugs are only half the story. A well trained vacuum cleaner has a long flexible snout which can be fitted with a narrow nozzle, or a wide mouthed nozzle, and even a brush to use on mattresses and furniture. With these parts of the cleaner, a person can go over the draperies or walls, along the tops of windows and doors. Any place where dust collects, this long snout will nose about and snuff it up.

And all any vacuum cleaner asks in return is two or three drops of oil occasionally—if it is not made with ball bearings—a clean dustbag, and a dry, cool place to stay. The first two, service men tell me, cause the other thirty-seven women of every hundred just about all the trouble they ever have with their cleaners.

Women are stingy with oil; and the best of housekeepers is apt to let the bag of her cleaner get clogged with dust. That means that the fan must force the air through a heavy mass of dust as well as through the bag. The pressure required to do this lowers the suction on the rug.

"Empty your dustbag as often as you would your dust pan," says one authority.

But few of us thirty-seven do. A weekly cleaning is a fair compromise and keeps the bag in good shape.

Good Coffee

There is a quaint old cookbook in my husband's family that starts out every recipe with "Take a clean dish."

Though we often laugh about it, the writer certainly struck a fundamental note in that direction. Perhaps you may regard it as impertinent if not insulting today, but have you never known anyone who tried to make good coffee in a dirty coffee pot? It can't be done, of course, but not everyone realizes it.

Nor does everyone who starts out with a good brand of coffee and a clean pot succeed either. Only the other day a friend of mine,—a traveller of wide experience, and a man my mother would have called a "finicky" eater, burst out with the wish that the American housewife would learn to make coffee correctly.

"Do you know," he asserted vigorously, "the average woman thinks she can *cook* coffee."

I nodded nervous agreement. I did not have to rack my brain to remember plenty of wives who dash down and plug in the percolator before they dress; then go back upstairs and leave that coffee gurgling away until they are dressed, the

Mr. and Mrs. Fred Golliver, of Mineral Point, Wisconsin, like their coffee hot.

toast is hot, and the breakfast on the table.

"If you cook it after the aroma is out, you might just as well be cooking up a burnt stick," he went on.

And making it right is such a simple matter, too, according to a cooking teacher I know.

"Take six tablespoons of coffee and beat it up with part of a beaten egg,—one egg will make three pots of coffee,"—she says. "Pour over it six cups of boiling water. In a few seconds coffee will come to the top in lumps. Take a cup and pour the water back and forth through those lumps several times. Then set it back and let it simmer three to five minutes.

"When you make your coffee in a percolator," she continued, "allow one tablespoon to a cup, and pour boiling water over the coffee. Let it percolate not more than five to

eight minutes. Do not let it steep and steep over the grounds.

"And if you want to warm up any of the left over coffee, pour it off the grounds before you heat it up."

A Motor for Kitchen Jobs

It was just like Christmas at our house the other night. Round about lamp lighting time, the man down at the station called up to say,

"Your dough mixer's here!"

So right after supper, my husband drove down after it. He brought the big packing cases into the kitchen, pried the boards off and pulled excelsior away from the

We Tried It for Squeezing Oranges

various parts of the machine. Dorothy and I flew around washing up each piece as it was unpacked, oh-ing and ah-ing over each new device that came to light, and wanting to try them all at once.

The neat, snug little motor stands on a porcelain topped cabinet, with all the bowls, and mixers, and shredders, and beaters put away in carefully marked places on two sliding shelves that roll out at the touch of my finger. It looks so efficient and capable that I can just feel a big job of entertaining coming on so I can try all of its tricks at once.

Of course, we could not wait till

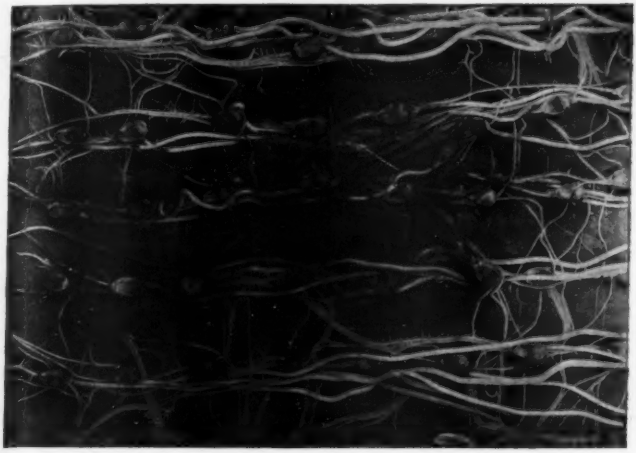
Everything Has Its Place on One of the Sliding Shelves.

next day to try it out. As soon as the fruit extractor was washed, Dorothy fastened it on and squeezed some oranges. Then she remembered that she had to make some fudge for a candy sale at school next day, and she beat that up with the motor, too.

But I was eager to try it at the routine jobs of food preparation. Early the next morning, I set it to work beating up flour and yeast and water for a small batch of whole wheat bread. After the dough had risen for an hour or so, I put the bread hook on and watched it mix and knead that bread for me.

Of course, I needn't have stood over it and watched. I might quite as well have gone about my business getting out materials for a cake, and getting the vegetables ready for dinner, but it just

(*Continued on page 22*)



Strong Shoots from Kernels on Top and Bottom of Picture Show Vigorous Germination. Weak Shoots and Decayed Condition Indicate Diseased Ears in Three Center Samples

Play Safe by

Testing Seed Corn

TRUMAN E. HIENTON*
Agricultural Engineering Department, Purdue University.

"AS a man soweth, so shall he also reap" has perhaps a greater significance to the man planting his corn than to the man sowing his oats, be they domestic or otherwise. The wise farmer, to insure a good stand of corn, plants seed corn that has shown not only good germination qualities but also freedom from disease. He follows this practice relying on the teachings of his own experience combined with knowledge gained from the results of carefully conducted experiments.

Definite proof of the value of testing seed corn is reported by the Ohio Agricultural Experiment Station in which it was shown that an average increase of four bushels of corn per acre resulted from the use of tested seed over untested seed. One-tenth the value of this increase is more than sufficient to cover the average cost of individual ear testing.

Electric heaters find a very important place in the testing of seed corn. They may be used to warm several rag dolls for testing the seed corn on an individual farm or to heat the larger rag-doll germinating box used to test the seed corn for the entire community. For the farmer who wishes to test only his own seed corn, a few electric lamps will provide the neces-

* Acknowledgment is made to Professor R. R. Mulvey, Agronomy Department, Purdue University, for assistance in preparation of this material.

sary heat. For the larger germinating boxes other types of electric heaters may be used with a thermostat to regulate them.

Two methods are used in the testing of seed corn, the "rag doll" method and the tray germinator. (This latter method was described in the February issue of ELECTRICITY ON THE FARM.)

How the "Rag Doll" is Prepared

The modified "rag doll" is prepared by placing a piece of ordinary paper toweling 12 in. x 48 in. on a piece of heavy pearl, water finish fiber paper, of the same width but a few inches longer. The paper toweling should be dampened and from 6 to 8 kernels from each ear placed in rows two inches apart on the toweling crosswise of the strip. This affords a capacity of 20 ears to each doll which is rolled into a circular bundle and labeled corresponding to the rack or the numbers of the ears that it contains. The doll is placed on end with the points of the kernels down in a box maintained at a ten.perature of approximately 80° F. The dolls should be moistened daily and kept in the box for one week. At the end of the week they are removed and inspected or "read" to determine the strength of germination together with freedom from disease. This is described in Purdue Extension Bulletin No. 97.

For the farmer with any quantity of corn to be tested who has electric service available, it may be possible to do the work as cheaply or perhaps at less cost than by hiring it tested. The educational value to the individual who tests his own seed is sufficient to compensate him for the time spent in the operation. The experience gained enables him to select ears in subsequent seasons that will carry less disease and average higher and stronger germination.

Following of simple rules is all that is required to enable one to read the results of the test. Kernels that fail to germinate are readily apparent. Kernels that develop only one thread-like root are considered weak. Moulds that stunt the growth and cause seedling to decay are evidence of

(*Continued on page 32*)

Community Seed Corn Tester Used in High School Near Washington, Indiana, for Use with Modified "Rag Doll" Method

Tune in Majestic Theater of the air over Columbia Broadcasting System every Sunday night at 9 to 10 Eastern Standard Time.

Amazing Tone—and Value

TONE—musical values—and *pocketbook values* have never been so combined as you will find them in Majestic Model *72*.

Quality and beauty your callers will envy—quality and beauty that make it more and more a loved thing, bringing continual pleasure—Majestic's last word in *radio on the farm.*

Model 72 pictured has a beautiful Louis XVI walnut cabinet, with doors of diamond matched Oriental Walnut. Genuine inlaid marquetry border. Instrument panel also of diamond matched Oriental Walnut, framed with butt-walnut and bird's-eye maple panel. Seven completely shielded tubes, employing R. F. L. balanced circuit. Majestic Super-Dynamic speaker. Volume control is *instantaneous.* Single dial control. Runs from your electric light socket if you have 60 cycle or 25 cycle standard A. C. current.

Majestic

$167.50
LESS TUBES
Prices slightly higher west of Rockies

GRIGSBY-GRUNOW COMPANY
5801 Dickens Ave., Chicago, Ill.

Motor for Kitchen Jobs

(*Continued from page* 18)

fascinated me to see that hook roll the bread over and over and around, picking up all the flour and mixing it in.

I'll get used to it, of course, but right now while it's new, I want to enjoy watching it do its stuff.

We Both Work at the Same Time

After the bread was mixed and tucked away in a warm place to rise, I put some shortening and sugar in another bowl and had the motor cream them while I sifted the flour and baking powder, and measured out the milk. Then I added them alternately while the beater mixed them in all fine and smooth.

Next, I took that bowl off and put on another with the egg whites in it. A special whisk beat them up dry and stiff and ready to fold into the rest of the mixture by the time I had my pan greased and things picked up.

I'll tell you more about the working of this machine later, but it looks to me as though it was going to multiply me by one and a half right from the start.

MY EXPERIENCE WITH ELECTRIC BROODERS

By C. W. SKEELE

IN the Spring of 1927 I purchased two 500 chick electric brooder stoves. I first tried one of the stoves in April. As this was my first experience I merely tried this one out on cost and to see how efficiently and how perfectly it would operate. The electrict brooder was so satisfactory that in May when I hatched the second flock of white leghorns I purchased the second electric brooder. On both brooders I kept a record of the loss of chicks and also the cost of the current consumed. We lost 25 chicks out of the first 500 and 20 out of the next 300. The amount of current consumed for each brooder stove for a period of 7 weeks was 175 K. W. H.

It is readily seen that at an average price for current this cost is as low or lower than the cost of either oil or coal. Although the factor of cost of operating stove is a large element in the cost of raising chicks there are other costs which we must take into consideration. The loss of large numbers of chicks has been eliminated with the electric brooder, because the electric gives a better method of fresh air ventilation and allows all of the chicks the same opportunity of fresh warm air. This tends to reduce loss of chicks and to make the chicks stronger, healthier and able to produce eggs earlier than with the other brooder stoves. One readily can see this also means a reduction in the cost of raising chicks.

Electric Brooder Needs Little Care

The element of care that a brooder stove must receive is an item in the expense of raising chicks. With the electric, once you have set the temperature it is automatic and requires no more attention. You can feel sure that your chicks are maintained at the same temperature day and night. Then too, you have no ashes to carry out or coal or oil to worry about. This means a saving in time and labor.

I found that with the electric brooder the chicks were more sturdy and better developed. Also I was able to pick out the cockrels at an earlier date than when raised under the coal brooder.

I would no more think of raising chicks without an electric brooder than I would of being without lights in my own home. To those who are buying brooder stoves this spring it would be well for you to investigate the several makes. Each electric will pay for itself the first year.

Think of having a water system *made and backed by* GENERAL MOTORS

The New
$75 DL
WATERBOY
"Water by Wire"
Ask your dealer to demonstrate

THINK what it means to have on your farm a water system designed by General Motors engineers . . . built to General Motors standards of precision . . . offering typical General Motors value at low price. You can have that kind of a water system. Just be sure it's a DL . . . the name that assures quiet, dependable, economical operation.

The latest development is the new DL Waterboy, with 5-gallon pressure tank; 225-gallon per hour capacity; V-belt drive; channel steel base and many other famous DL features. It's a *real* DL Water System . . . unequaled in performance and value . . . yet it costs only $75 f.o.b. Dayton. Think of it!

In the larger sizes, the DL line includes deep and shallow well models delivering up to 800 gallons per hour and priced correspondingly low. Let us send you our free booklets about DL Water Systems which operate on central station current. Read all about them. Find out why you should have one *now* . . . how little it costs . . . how easy to buy on G.M.A.C. liberal monthly terms. Mail the coupon at once . . . *today.*

DELCO-LIGHT COMPANY
Subsidiary of General Motors Corporation
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DELCO-LIGHT ELECTRIC WATER SYSTEMS

PRODUCTS OF GENERAL MOTORS
Also Manufacturers of Delco-Light Electric Power and Light Plants

DELCO-LIGHT CO.,
Dept. T-91, Dayton, Ohio.
Send free booklets on DL Waterboy and other DL Electric Water Systems.

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County ..... *State* .....

Lighting the Farm Home

BY W. C. BROWN and M. S. MEAKER

Engineering Department
National Lamp Works of
General Electric Company

A BEDROOM is an interesting room to light. At first thought, bedroom furnishings seem almost as standardized as kitchen furnishings — and in the kitchen a ceiling light and brackets over the important working places will solve the lighting problem. But a bedroom is subject to change; for instance its arrangement in winter is likely to be quite different from what it was in warm weather. Then, too, a bedroom is a much more "personal" room than the kitchen, and its lighting has a great deal to do with the comfort of the one to whom it is "my room."

The problem of providing really good bedroom lighting takes on added interest because during the course of a year or so a certain room may serve every member in the family, and each member has different ideas as to what is needed in lighting. For example, the big east bedroom may be father's room at present, and all he cares for is enough light to see to hang his clothes over a chair at night and put them on in the morning. But if mother shares the room she wants a good light at the mirror, too, and perhaps a night light at the side of her bed. Later it may be sister's room. Sister is very much interested in the light at the mirror, but her chief delight is in a bridge lamp which she wants beside the desk where she writes her letters and pores over beauty articles or recipes, depending upon her mood.

Let us see, then, what equipment will be necessary to meet the lighting requirements of the different members of the family.

Starting with the least exacting member — father — the bedroom should have first of all a good ceiling light for general illumination. Three different types of ceiling

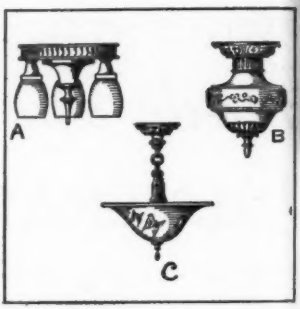

Fig. 1. Three different types of ceiling lights for the bedroom.

lights suitable for the bedroom are shown in Figure 1. The enclosing glass globe, with a 60-watt or 100-watt inside-frosted lamp, is very practical. The shower fixture, with 25-watt or 50-watt inside-frosted lamps, is also suitable. Either of these fixtures will serve very nicely in a bedroom for grownups.

Now as to mother's needs. She uses the ceiling light, of course, but she values a good light at the dresser mirror. We can not depend upon the ceiling light for this purpose, because when one stands facing the mirror the light from the ceiling fixture falls on the back and leaves one's face in shadow. To give good illumination on the face, a bracket light should be placed at each side of the mirror, about 66 inches above the floor. Bracket lamps may be attached to the edge of the mirror itself, and if there are sufficient convenience outlets in the room the dresser may then be moved around as desired. If lamps for the dresser are installed on the wall, they should be located with

Ellis Haynes, Dansville, Mich., who uses an electrically driven De Laval Milker and other electrical equipment, with the assistance of H. J. Gallagher, agricultural engineering specialist, kept an accurate account of the cost of various farm operations for one year. It was found that a gross savings of $136.88 had been made, in addition to the increased pleasure and satisfaction derived from the operation of this modern equipment. Mail coupon for full information.

Electrically Operated DE LAVAL Separators and Milkers

For Greater Profit and Pleasure in Dairying

De Laval Separators and Milkers can be furnished with electric motor equipment and are ideally suited for operation by this form of power. Electricity is an extremely economical and dependable source of power for operating De Laval machines, and electrically equipped De Lavals have done much to increase the pleasure and profit in dairying. No one who has ever operated an electrically driven separator or milker has the slightest desire to go back to other methods.

De Laval "Golden Series" Separators are known the world over for their durability and clean skimming. They are the standard by which cream separators are judged and in every dairy section of the world they are earning greater profits for their users.

The De Laval Milker has earned an equally impressive reputation for itself, milking over 1,250,000 cows in every section of the world, saving time and labor, enabling each cow to produce to the maximum, and making the production of clean milk easier.

De Laval Separators and Milkers now in use may be equipped for operation by electricity easily and at small cost.

THE DE LAVAL SEPARATOR CO., New York, 165 Broadway
Chicago, 600 Jackson Blvd. San Francisco, 61 Beale St.

Please send me, without obligation, full information on
☐ Electrically driven milker
☐ Electrically driven separator
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Name .....

Town .....

State .....

ample space between them to accommodate a wide dresser.

In either case, the dresser lights should be well shaded. And it is more practical to have the shades of some neutral, light, color, so that they will throw a clear, natural light on the face. Shades may be had in light cream colored glass or silk, with touches of other colors in decorative border designs or in the binding at the top and bottom.

In any bedroom it is very convenient to have a small bedside lamp that can be turned on in the night without awakening other occupants of the room. Such a lamp is particularly useful in a room where children sleep. A convenience outlet near the head of the bed will supply this lamp, and will also serve an electric heating pad.

Fig. 2. Here we see the semi-indirect ceiling light, such as C in Fig. 1, in use in a real nursery. The torchieres on the chest of drawers are of heavy glass, and they give a soft light at the mirror. On the little table is a lighted china dog—children love such lighted toys and they make very cheerful night lights.

And now that we have come to the children, by all means let us remember that the needs of the youngest members of the family are truly important, and whether they have a room to themselves or share the parents' room the lighting should have special attention.

Babies or small children have extremely sensitive eyes, and we should take every precaution to safeguard their vision while their eyes are developing. A child's attention is always attracted to the brightest object in view, and ordinary ceiling lights that we would never notice as we go about the room are right above the child as he lies in his crib. Anyone who has ever been ill and forced to lie in bed in a room with a direct lighting ceiling fixture can understand how a child's eyes must be irritated, when he lies and blinks up at a bright light source.

Light for Child's Sleeping Room

The only safe general lighting for a child's sleeping room is indirect or semi-indirect lighting. Number 3 in Figure 1 shows an excellent type of semi-indirect ceiling light. The glass bowl should be very dense, allowing just enough light to come through so that the bowl will not appear dark from below, and directing the rest upward to the ceiling, which reflects it back into the room as soft general illumination. In this type of fixture, a 60-watt to 100-watt inside-frosted lamp is recommended, depending upon the size of the room.

Sister comes next—and she is happy if her room has plenty of convenience outlets. She likes to be able to change her room all around from time to time; to move her dresser from one side of the room to the other and to have the desk or study table "over there, not here!" Convenience outlets make it possible for her to practice interior decoration as she wishes without sacrificing the good lighting that she needs for

New Contest Rules

$50 in Prizes for April

So many readers have written us of the fun they're having with our Cover Title Contests, that we've decided to increase the prizes for April and to make it easier to send us your title. Every farm family getting this little magazine can now enter. You need only fill out the form below or if you don't want to tear the magazine, you can make out your own form on a separate sheet of paper, writing on one side only.

In addition to the $25 cash prize for the best title to this month's front cover, we will pay $5 for each of five titles given honorable mention.

Here are the rules:

1. **Only farmers or members of the farm family receiving this magazine are eligible.**
2. **Only one title may be submitted.**
3. **Use the form below or write your answers on a plain sheet of paper in similar form.**
4. **Be sure to vote on questions (a) and (b).**
5. **Write plainly and send your suggestion to Title Editor, ELECTRICITY ON THE FARM, 225 West 34th St., New York, before April 1.**

My Title for April cover is.....

.....

.....

(a) The most useful electrified devices we now have are:

.....

.....

.....

(b) We hope to have sometime:

1st .....

2nd .....

3rd .....

Name .....

Address .....

reading or study. And the inexpensive bridge lamp of her own, and perhaps a reading lamp at the head of her bed, will greatly increase the pleasure sister takes in her room. In these days it is a very desirable thing, too, that sister should enjoy her home and find it a pleasant place to spend her evenings!

Bathroom

The most satisfactory and practical way of lighting the bathroom is by wall brackets at both sides of the mirror, fitted with 50-watt inside-frosted lamps in white, cup-shaped glass shades. This equipment will give a clear light, with no troublesome shadows, at the mirror, and in the bathroom of average size it will give sufficient illumination for the whole room. Very attractive wall brackets for this use are made in colored porcelain. The proper height for the brackets is about sixty inches above the floor.

A single light directly above the mirror has frequently been used, but such lighting is very unsatisfactory for shaving, as it throws dark shadows under the chin. Really good lighting at the bathroom mirror will be found to be an investment in peace of mind and safety.

In a large bathroom a 100-watt lamp in an enclosing globe at the ceiling should supplement the lamps at the mirror.

Porches

For the average small porch, an enclosing glass globe at the ceiling, fitted with a 40-watt lamp, is recommended. The globe should be tight fitting to keep out bugs and dust, and preferably smooth on the outside so that dust will not collect and decrease the light output.

A screened-in porch often serves as an outside living room during the summer months, but if it is not provided with artificial lighting its usefulness is very limited after sundown. A couple of duplex convenience outlets will permit the use of portable lamps and electric appliances, so that the family may enjoy electrically prepared lunches, or read, in this cool spot.

The Cellar

If there is a furnace in the cellar, an ordinary kitchen lighting unit with a 100-watt lamp, controlled from the head of the stairs, can often be placed so as to light both the furnace and the stairway.

Fig. 4. Two 100-watt lamps RLM reflectors provide excellent illumination for a workbench of this size.

Oakes Electric Equipment

for

Sure - Simple - Easy

Chick Raising

Successful chick raisers, the country over, recommend Oakes Electric Poultry Supplies. This complete dependable line enables them to make more money with greater ease and security.

ELECTRIC BROODER.
New, Square Type, Electric Brooder, low priced and dependable; equipped with thermostat, 8 ft. drop cord, curtains, pilot light; 4 sizes.

ELECTRIC HEN
Oakes Electric Hen produces the largest possible percentage of fine, healthy chicks. The latest, most advanced features.

OAKES QUALITY POULTRY SUPPLIES

Be sure you get **Oakes** supplies from your dealer. Write for Big, Free Catalog.

Electric Fountain Heater keeps water from freezing. Prevents fire saves labor; sturdily built.

IMMERSION HEATER
Oakes Immersion Heater thaws and warms the water in either poultry or stock watering troughs. Low priced and mighty handy.

OAKES MANUFACTURING CO.
77 Dearborn St., Tipton, Ind.

THE MODERN FARM HOME HAS RUNNING WATER

And the selection of a pump or water system is of utmost importance, if you are to derive the greatest benefit and help from its installation. Experience has shown that it is poor economy to buy a pump too small for the maximum duties about the premises. Many modern country homes are now equipped with two automatic electric systems—one for soft water under pressure, for bath room and other general use about the home and tenant house—the other for spring or well water for barn, stock and houses.

Also a vital factor in satisfactory trouble-free service and low maintenance cost, is a pump mechanically suitable for the most exacting requirements. The Burks Super Turbine is such a pump. Expert engineers have told us it is mechanically perfect. Has only one moving part—no friction bearing surfaces to wear, cause grief, necessitate replacement and expense—in fact there is no metal to metal contact of moving parts and ***therefore no wear.*** This wonderful piece of essential farm equipment is durable, reliable and efficient to the extreme.

BURKS SUPER-TURBINE PUMPS
Only one moving part
"A Life-Time of SERVICE"

DECATUR PUMP COMPANY
Decatur, Illinois

Please send me descriptive literature on Burks Super Turbine Pumps.

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Century

PORTABLE Power Units

This Century Portable Power Unit is ideal for general-purpose farm work—light, but strong and fitted with belt-adjusting screw.

CENTURY ELECTRIC CO.
1806 Pine St. St. Louis, Mo.

40 U. S. and Canadian stock points and more than 75 outside thereof.

Century MOTORS

For the cellar that is used as a laundry, one or two RLM reflectors should be provided over the tubs and ironing board. They should be located at the ceiling and equipped with 100-watt inside-frosted or 150-watt Daylight lamps. Convenience outlets will be needed for the operation of the electric iron and washing machine.

In case the men sometimes bring the cellar into service as a workshop, their workbench can be lighted satisfactorily by an RLM reflector mounted at the ceiling, and far enough out from the wall so that work clamped in the vise will not be in shadow. This will usually be about three feet.

Fig. 3. Such simple equipment as this gives the modern bathroom comfortable and pleasant lighting.

A 100-watt inside-frosted lamp or a 150-watt white-bowl lamp should be used. If the bench is more than six feet long, two such units are desirable. Convenience outlets just over the bench will serve the soldering iron, glue pot, and electric tools.

For the fruit cellar a 60-watt or 100-watt inside-frosted lamp, controlled by a pull-chain socket, is recommended.

The Farm Shop

Electric lighting in the farm shop makes it possible to do repair work at night, instead of breaking into the day for the many minor repairs. There should be good, even illumination in the shop, and freedom from shadows to facilitate work on machinery. Excellent results will be obtained from RLM reflectors with 100-watt inside-frosted lamps mounted ten feet above the floor and spaced about ten feet apart each way. One of these units should be hung directly over the bench, or two if the bench is long. An extension cord, with wire guard to protect the lamp, will be found useful for working around machinery. The outer insulation of the cord should be of tough rubber; ordinary lamp cord soon becomes frayed and worn in such service. There is a 50-watt Mazda Rough Service Lamp which is designed especially to withstand the bumps and shocks of extension-cord service.

Garage

For lighting a one-car garage, a 60-watt or 100-watt inside-frosted lamp is suggested, located above the hood of the car.

An efficient and economical means of lighting the garage is by an RLM reflector with a 100-watt inside-frosted or 150-watt white bowl lamp, mounted at the ceiling just over the hood of the car. This equipment may be hung from a suspension wire across the garage, so that it may be slipped back and forth as desired. In a double garage, each car space is equipped in this manner. The garage lights may be controlled

For the Farm

With General Electric Motor

This new type

Thor

Agitator

That has nothing to get out of order

CONTINUOUS service is the big consideration in the purchase of a washing machine for the farm home.

The first Thor Washers were built 21 years ago. Many of the original machines are still giving dependable service. And over a million are in use.

This latest Thor Washer has fewer parts than any other—no belts to slip and break—nothing to get out of order. It makes play of wash-day—does a tubful of clothes sparkling clean in 5 minutes. And it's built like a battleship—to last a lifetime.

The New Thor Agitator is the world's lowest priced quality washing machine. For descriptive matter about this and other faithful Thor products write to

THE HURLEY MACHINE CO.
22nd St. and 54th Avenue
Dept. B Chicago, Ill.

Electrify your sewing machine

Stop back aches

No more pedal drudgery. You can attach the Hamilton Beach Home Motor to *your own* sewing machine—the machine you already know—and let the motor do the work. It makes your old machine as efficient and easily operated as the most expensive electric machines. Attached instantly. It makes sewing a pleasure. Sold at stores.

Sews Twice as Fast

Make 2 dresses while now making 1. Pays for itself in a few days' use. Electricity cost less than 1c an hour. Pedal gives absolute control of sewing speed. The Home Motor with attachments also mixes cake, whips cream, beats eggs, sharpens knives, polishes silverware or runs electric fan.

Free Booklet

If you have a treadle sewing machine, send for free booklet telling how the 1,000,000 Hamilton Beach sewing motors now in use save hundreds of hours' work and make housework a joy. Price is very low. Mail coupon today —NOW.

Hamilton Beach
Home Motor

HAMILTON BEACH MFG. CO.
M6053 H. B. Bldg., Racine, Wis.

Without obligation, please send booklet explaining how Home Motor saves me many hours of work every week at a saving which pays for motor in few days.

Name .....

Address .....

Town..... *State*.....

by three-way switches at the garage door and at the house.

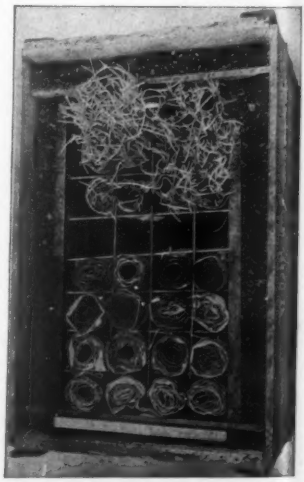
A portable cord with a 50-watt Mazda Rough Service Lamp in a suitable guard is very useful in the garage. Convenience outlets, 48 inches above the floor, should be provided for such equipment.

Testing Seed Corn

(*Continued from page 20*)

disease. These dead, weak, and diseased ears are to be discarded. The seedlings approximate a performance that is to be expected in the field. Bright, vigorous growing seedlings represent the ears that will produce a stand of corn even under unfavorable conditions.

Mr. Charles Meharry of Attica, Indiana, who operates three farms near Odell, Indiana, had, prior to 1928, arranged to have his seed corn tested by a testing plant. In 1927 his bill for testing his seed corn amounted to approximately



Simple Home-Made Germinating Box Constructed from Two Store Boxes, with a Layer of Sawdust Between Them. A Modified "Rag doll" Is Placed in Each Compartment.

$200. Upon investigation, Mr. Meharry found that the materials for a germinating box which would have a capacity of forty bushels per week would not cost a great deal more than the entire cost of his previous year's bill for testing.

Use Abandoned Church

As a result, a germinating box was built in an abandoned church on one of the Meharry farms located at Odell by those in charge of the farms. Two 500-watt strip heaters provide heat in the germinating box and are controlled by a thermostat. Records secured in 1928 show that, at 4 cents per kilowatt-hour, there is a current cost of twelve cents per hundred ears.

Establish Community Corn Testing Stations

Many farmers do not care to go to the trouble to test their own seed corn, preferring to pay a small charge per ear where they can hire it done. As a result, many county agricultural agents and teachers of vocational agriculture in rural high schools have assisted with the organization of seed corn testing establishments which are operated in conjunction with their work or by cooperating agencies such as county farm bureau organizations. In other cases, associations of seed growers or individual farmers have operated seed-corn testing plants.

Over a Million Ears Tested

Estimates place the number of ears of corn tested for seed by community testers in Indiana in 1928 using the rag doll method at more than a million. Plans for a rag-doll germinator box suitable for use in community testing plants are available from the Agricultural Engineering Department of Purdue University. This box is designed to accommodate 112 rag dolls at one time which affords a weekly capacity of 2240 ears or about 22 bushels. It is of frame construction and suited primarily to the use of electric heaters as a source of heat. The cost of the box ranges from $20 to $50 according to the material used.

An Electric Milk Cooling Unit So Simple You Can Install It Yourself!

The Haven is the simplest of all farm milk cooling systems. No pipes to connect or disconnect. No delicate or complicated parts. Operates without belts, chains or valves. No technical knowledge required, either for installation or operation.

Simple, compact, efficient, dependable. Designed and constructed especially for farm service.

Supplied with or without tank, as desired. Cooling capacities: 200 to 1400 lbs. of milk per day. *Can be used for cooling either bulk or bottled milk.*

Write for Bulletin "B" which describes the Haven Farm Milk Cooling System in detail.

(A few good dealer territories still open.)

HAVEN MANUFACTURING CO.

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Complete Haven Installation, with all-steel insulated tank.

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Electric PumpJack

will convert your ordinary pump into a water supply unit, controllable all weather by a button in the house, that will unfailingly deliver all the water you want—deep or shallow well. It works equally well.

Built Like a High Grade Auto Transmission

Machine cut hardened gears, fully enclosed, running in oil. Bronze bearings. No chains or sprockets. High grade motor. Compare with all others. Write for special literature and prices.

Also complete Water Systems

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Use a GILLETTE Portable Electric Clipping and Grooming Machine. Operates on the light circuit furnished by any Electric Light & Power Co., or any make of Farm Lighting Plant.

Price List on Request

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ELECTRICITY and a DAYTON Water System will provide your farm with the greatest convenience of all —*Running Water.*

DAYTON Water Systems are made in a complete range of capacities for deep and shallow wells.

Write for details.

The Dayton Pump & Mfg. Company

Pioneer Makers of Private Water Systems

The DAYTON Unisystem made in four sizes. **Dayton, Ohio, U.S.A.**

Keeping Microbes out of Milk

(*Continued from page* 15)

Washing the milking machines used to be looked upon as one of the particular bugbears of dairying, but modern methods have changed that, too. A washer-sterilizer operating from the vacuum system of the milking machine cleans them effectively on several certified milk farms in the Chicago milk district.

Sterilizing the Milker

The operator rinses the milker off in cold water just as usual and washes it clean with a brush. Then he places the milker head with all the tubes attached on a special fitting of a pipe connected with the vacuum system. An open trough below holds the scalding water and the teat cups hang in it.

When he turns the motor on, the vacuum draws the hot water up through the cups and tubes, into the head and then into a vertical tank. A float releases it and lets it drop back into the trough below, to be drawn up again and again for ten minutes.

Water is piped to the washer in the picture. Its temperature is about 190°.

In spite of this care, there are bound to be a few bacteria in the milk after all. If they can be kept at just a few, they will do no great harm. But warm milk favors rapid multiplication, and the only way to keep the numbers down is to chill the milk as quickly as possible, and to hold it at low temperatures until it is used.

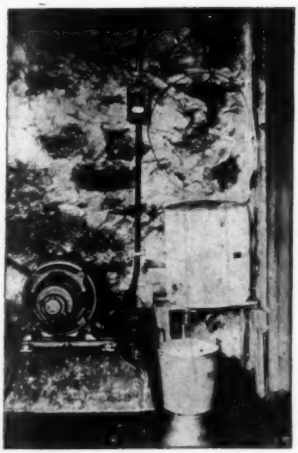
In some places well or spring water will chill it down to 50°,—above this the bacterial increase is very rapid. Many farmers put the cans of milk in tanks chilled with ice. Some are beginning to use mechanical refrigerating units to cool the water in concrete tanks, or the air in dry storage chambers. With these units it is possible to cool the milk down to 45°, and to keep a steady low temperature without work or attention.

Cooling the milk has no part in

keeping the microbes out in the first place,—but it shoulders the entire responsibility for preventing their increase to the danger point.

I realize that suggesting mechanical refrigeration to the farmer who is producing milk for an ordinary market at an ordinary price is somewhat like the insinuations of the rooster who went journeying to a nearby zoo, and came upon an ostrich egg. But I would plead in explanation, that I, like him, am calling attention to profitable possibilities. There are already many places where clean milk pays.

He decided, you remember, to take the egg home with him and

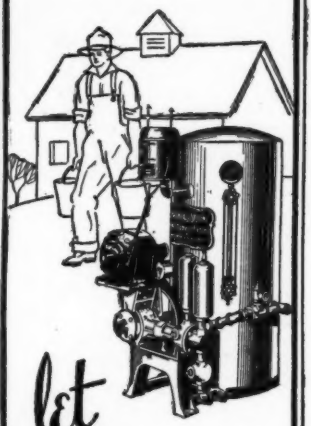


Five-Gallon Electric Water Heater.

rolled it patiently along with his beak, over and over, up little grades and down swift inclines till be brought it in safety to his own barnyard.

Wiping the perspiration from his beak on a wing feather, he uttered a little crow of command that brought the hens clustering around him.

"I'm not criticizing you, girls," he said. "But I just want you to see what they are doing in other communities."



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The Paul will work for you for a few cents each day! And the first cost is *much lower than you expect.* Use the coupon now and let us recommend the system for your needs.

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Pumps and Water Systems *Water Softeners Heaters*

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The New **STEWART STOCKMAN**

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Clipped cows give more milk, richer in butter fat. Clipped cows are easiest to clean—their milk is cleaner and stays sweet longer. Tests show increased profit as high as $1.40 per month per cow.

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Electric Farm Alarm

FOUR purpose alarm, warns you in case of burglary, fire, failure of highline current or change in brooder temperature. Protects one or all buildings.

Uses dry cells or highline current. Closed circuit principle —rings if wires are cut, shorted or tampered with. Cannot be beaten in any known way. No buried wires—simple to install and economical to operate.

Sold under money-back guarantee.

SAFEGUARD ALARM CO., INC.,
Council Bluffs, Iowa

Water for Crops

(*Continued from page* 12)

used. In Virginia 43 per cent of the irrigation systems were equipped with electric motors, 40 per cent with gas engines and 17 per cent secured their water from city mains.

While the areas with overhead irrigation are usually small, yet the intensity of crop production makes them important business enterprises. Several instances were found in the New Jersey survey where one and two acres of irrigated land produced satisfactory incomes, and an area of five acres irrigated, usually proved a more satisfactory business enterprise than a 50-acre truck farm devoted to less intensive vegetable production. For the florist and nurseryman also, irrigation is becoming indispensable. Most of the successful florists and nurserymen are installing irrigation systems.

Anyone interested in overhead irrigation should secure the following bulletins: U. S. Dept. of Agriculture, Farmers' Bulletin No. 1529—Spray Irrigation in the Eastern States.

New Jersey Agricultural Experiment Station Bulletin No. 453—Sprinkling Irrigation on Vegetable Farms in New Jersey.

California Agricultural Extension Circular No. 4—Irrigation by Overhead Sprinkling.

Bulletins and catalogues of the various manufacturers of irrigation equipment.

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"A bright youngster, this new year,
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That is one reason why this electric pumping unit is installed on so many farms, to handle this back-breaking job so cheaply, so quietly, for so many years.

In the BEVAN Jack you also get a patented method of applying the electric power through a walking beam that gives extra long leverage on the lifting stroke. With a genuine BEVAN jack of this design, a ¼ H.P. motor is ample to pump a 100 ft. well.

Your best purchase for wells down to 500 ft.

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Raises 5% to 20% More Chicks

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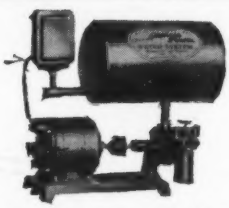

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